

Claims

What is claimed is:

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1. A search engine system, comprising:

an associative memory;

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a first search engine having a first data input and a connection to the associative memory; and

a second search engine having a second data input and a connection to the associative memory.

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2. The search engine system of claim 1, further including a pre-parser having an input connected to the first data input and an output connected to an input of the first search engine.

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3. The search engine system of claim 1, further including a hit output queue connected to the first search engine.

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4. The search engine system of claim 3, further including a proximity search engine connected to an output of the first search engine.

5. The search engine system of claim 4, further including a key list connected to the proximity search engine.

6. The search engine system of claim 5, further including a proximity hit queue connected to the proximity search engine.

5 7. The search engine system of claim 1, wherein the first search engine includes a transform generator.

10 8. The search engine system of claim 7, wherein the transform generator converts an input data into an address and a confirmer.

15 9. The search engine system of claim 5, wherein the key list contains at least two text strings and a distance between the at least two text strings.

10. The search engine system of claim 1, further including a packet input queue connected to the associative memory.

11. A method of operating a search engine system,
comprising the steps of:

- a) forming a packet of data;
- 5 b) when the packet of data contains a start flag, starting a
sliding window search on the packet of data;
- c) when a match is found, determining a location of the match.

10 12. The method of claim 11, wherein step (a) further includes
the step of:

- a1) parsing a raw data to find a predetermined set of
characters;
- 15 a2) when the predetermined set of characters is found,
replacing the predetermined set of characters with a replacement set
characters.

20 13. The method of claim 12, wherein step (a1) further
includes the steps of:

- i) defining the predetermined set of characters to
be any combination of white space characters;
- ii) defining the replacement set of characters as a
space character.

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14. The method of claim 12, wherein step (a1) further includes the steps of:

i) defining the predetermined set of characters to be all capital letter;

ii) defining the replacement set of characters as a corresponding lower case letter.

15. The method of claim 11, further including the steps of:

d) determining if the match is contained in a proximity key list;

e) when the match is contained in a proximity key list, determining if the match is a primary index;

f) when the match is a primary index, storing the match in the proximity hit queue.

16. The method of claim 15, further including the step of:

f) when the match is a next index, searching the proximity hit queue for an associated primary index.

17. The method of claim 16, further including the steps of:

g) determining if a first entry is the associated primary index;

h) when the first entry is the associated primary index,

5 determining a distance between the next index and the primary index;

i) when the distance between the next index and the primary index is less than a proximity offset storing a proximity hit in the final proximity hit queue.

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18. The method of claim 16, further including the steps of:

j) when the distance between the next index and the primary index is not less than the proximity offset, flushing the primary index from the proximity hit queue.

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19. The method of claim 11, wherein step (a) further includes the steps of:

a1) receiving an input data stream;

5 a2) removing an overhead data to form a raw data stream;

a3) determining a start of a message;

a4) forming a search packet containing a start flag and a portion of the raw data;

10 a5) forming a plurality of search packets containing only the raw data;

a6) determining an end of the message;

a7) when an end of message is found, forming a final search packet containing an end flag.

15 20. A search engine system comprising:

an associative match memory;

20 a sliding search engine connected to the associative match memory; and

a proximity search engine connected to an output of the sliding search engine.

21. The search engine system of claim 20, further including a plurality of sliding search engines that are each connected to a separate data stream.

5 22. The search engine system of claim 20, further including a plurality of proximity engines are connected the sliding search engine.

10 23. The search engine system of claim 20, further including a pre-parser connected to one of the sliding search engine.

24. The search engine system of claim 23, wherein each of the plurality of pre-parsers contains a mapping table.

15 25. The search engine system of claim 24, wherein an entry in the mapping table contains a characters to be replaced location and a replacement characters location.

20 26. The search engine system of claim 20, further including a plurality of proximity search engines connected to the sliding search engine.

25 27. The search engine system of claim 26, further including a key list memory connected to the proximity search engine.

28. The search engine system of claim 27, wherein the key list contains a plurality of locations, at least one of the plurality of locations contains a primary index, a next index and a proximity offset.

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29. The search engine system of claim 27, wherein the proximity search engine contains a proximity hit list.

30. The search engine system of claim 21, further including a data input processor.

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